

could not give us the requisite pressure and for some time we were afraid the same would be the case with Gas. Our objection to steam was owing to the constant supervision necessary for efficient working, as well as the risk of fire, the dust, smoke, &c., as referred in the advertisement, Mr. Ingrams, Manager of the local Gas Company, on our application, supplied us with necessary data to ascertain the probable cost of a gas engine, gas and water pipe connections, &c., and with these particulars we found that there would be a saving of money on labour with much superior efficiency, on the average of working 50 hours per week. Where we paid from R90 to R100 for hand labour per month the gas engine using per week 2,500 feet of gas even at R7 per 1,000 feet would cost just about R70, giving the engine the full working time. This shows a most remarkable saving, but the actual saving has been more remarkable still. Our gas consumption for June, with quite our usual amount of work, amounted to only R39-90; add rent of gas and water meters and cost of supply of water, say R8; total 47-90, or a saving of between 40 and 50 per cent. And this is in addition to—as the advertisement puts it regarding the engine:—“No tedious preparation before starting; cleaning required, almost nothing; when compared with scaling a boiler and cleaning fires; no chimney to build—no smoke nuisance; no coal to get in, or ashes to cart away; no dust—no boiler, with risk of explosion; no water gauges or safety valves to watch; no fires to slack down or draw at stopping time—only gas to turn off and no regular attendance required beyond oiling, cleaning, and starting.” All this is worth recording, but we must state that the pay of one or two coolies has meantime to be deducted from the above total, which we expect will not be chargeable later on. Yet when it is understood that the engine has only to have a match applied to light a Bunsen burner, to start it in about three minutes, to stop it by turning off the supply of gas, it may be credited that the engine is equal to the most exacting economical requirements and is of extreme advantage in the case of work which may require short stoppages. But even in continuous running it is quite equal if not superior to the older motive power. One of the old pattern gas engines, with the troublesome slides,—which are not in the latest designs—have been known to run continuously night and day for ten years, with short stoppages for cleaning and repairs and is still working. The total cost of repairs and renewals for this period was only £25 or £3-10s per year. Ordinarily the life of a gas engine based on this experience would be twice or three times ten years as few have to run so continuously—even for a third of the time per day. Other instances of cost have shown that engines in everyday use for 10 years have only cost for repairs, “a few shillings per annum”!

One of the great advantages of the gas engine is its cleanliness. It might, it has been remarked, almost be run in a drawing room and with less dust than comes from an ordinary grate or stove! This saves having a separate compartment for it. The comparison is between the cleanliness of the gas engine and the condition of a place with a steam engine. The result is entirely in favour of the gas engine; and this advantage itself has commended it apart from its economy otherwise. There are none of the usual risks attendant on steam power, and, as to cleaning, five minutes every evening to wipe it down and about 10 minutes or so every week to clean out the valves is almost all that is required. During the time we have been running our gas engine, it has worked with the greatest smoothness and efficiency. It is placed in the centre of our machine-room, having machinery on both sides. This is for handiness in starting and stopping, but which also relieves to a slight extent the torsion strain on the shafting. It is of the vertical type, occupies a floor space of about 4 feet square, with a round water tank behind occupying say 30 sq. inches. Both are raised on concrete or brick foundations, the former about a foot, the latter about 18 inches. The top of this brick and concrete work is neatly

finished off with beaded polished teak boarding, and on these the engine and tank rest. The tank of water is simply used for the purpose of keeping the cylinder of the engine cool, by the well-known law that heated water, being lighter than cold, rises to the surface, which is then carried away to give place to cooler, and thus a constant circulation is kept up between the tank and the engine cylinder. The heat of the burnt gas in the cylinder is about 1,000 deg. Fah. and it has therefore been found necessary to keep the cylinder jacket cool by this means. The engine is practically silent in its working when compared with a steam engine. All the waste products of the burnt gas go into an exhaust box and are then conveyed by ordinary zinc piping above the eaves of the building. As already stated all the fire burning in connection with the engine is a simple Bunsen flame, which plays on a hermetically sealed tube that opens by a valve into the cylinder. The gas is supplied to the cylinder by another valve, and on the gas being compressed by the return stroke of the piston, the heated tube valve opens, the gas is ignited, and the expansion drives the engine. Other valves are used for the exhaust and for drawing air into the cylinder to mix with the gas in proper explosive proportions. All these valves with governor attached are worked on cams within a space of six square inches, and are practically all the working parts of the engine. The extreme simplicity and effectiveness of the engine have been constantly remarked, and well shows the advance made in this type of engine.

The handiness and adaptability of the gas engine have made it to be extensively used in electric lighting, and in this connection it has held more than its own with steam. This has been, of course, where gas is cheaper than in Colombo, but we are sure, from calculations made, that the expense, even looking at the fuel side alone, will still be in favour of the gas engine. This has been recognised by Mr. Torr Todman who has been requested to instal the electric light in the Bristol Hotel. For this purpose he has indented for a 12 horse-power horizontal gas engine, through Mr. Ingrams, manager of the Gas Company, and we believe it is only one of many others which it is expected will be indented for soon.

We are pleased to bear testimony to the most efficient way in which Mr. Ingrams has supervised and carried out the arrangements in connection with the installation of our own gas engine and connections, and we have no doubt but that others adopting gas as a motive power will receive the same attention and the same most satisfactory results as we have arrived at with respect to our gas engine—the first introduced to Ceylon.

COFFEE MACHINERY:

CEYLON PULPERS FOR LIBERIAN COFFEE.

On enquiry we learn from Messrs. Walker Sons & Co., Limited, with regard to their export of coffee machinery, that while as yet no orders have been received from Central Africa, fairly good business is being done with the Straits and Java in coffee pulpurs for Arabian and Liberian varieties, chiefly in double-disc pulpurs, but they have also sent a number of large machines with five discs working with sieves and buckets for Liberian coffee. They are now sending off one to a planter in Java who has already two of the same class at work. The cherry for these machines is sieved before it enters the pulper so as to separate the small from the large, and the two sorts are pulped by separate discs which have the chops adjusted to suit each sort.

This is the only way to get over the difficulty in pulping Liberian coffee, owing to the great difference in size of the cherry. A sample was lately got from the Coast and it was found that 50 per cent passed through a sieve with holes 15-16th inch diameter and the beans that passed through were about half the size of what remained. These two sorts when separated left two very even samples which are thus easily

pulped. The five-disc pulper arranged with separator sieve was judged by a Committee of the Java Planters' Association to be the best Liberian pulper introduced to Java.

COFFEE PLANTING IN SOUTHERN INDIA.

I was glad to see your article with regard to the prospect of coffee and also the statistics, which although meagre are a sign that planters are taking some trouble to let the outside world know something of the condition of their industry, which in the case of well cultivated estates is about as flourishing as any form of cultivation in the world. The idea of advertising is, I think, open to discussion, but with any amount of advertising I doubt whether English capitalists would invest their money so far away from home unless it were in a paying well established Company, or they had sons or near relations in this country to look after their interests, but as coffee planters in South India do not number more than 600 at the most, the opportunities for investment under those circumstances would not be very plentiful. In coffee there are no doubt openings and good prospects for young men who have or can command capital for investment after they have learnt thoroughly their business. Young inexperienced planters should be prevented from plunging headlong into land purchase when they think they have learnt everything and could teach experienced planters a thing or two about coffee planting. This is a common mistake which young men fall into, and they generally get these ideas after they have been out about 18 months. After another 18 months' experience it is wonderful what a change comes over them for they have then got a grip of things and begin to see that coffee planting is a more serious and intricate business than they thought. I have heard one or two of the most successful planters in Mysore say that the longer they are in coffee the less they seem to know about it. This is of course their exaggerated way of expressing that one is always learning something new in coffee planting.—*M. Mail.*

NEW AREAS OF CULTIVATION IN CEYLON.

(From Report by Mr. G. S. Saxton, Actg. Asst. Govt. Agent, Matale.)

A considerable acreage must have been opened in cacao. Land is being cleared for this product near Matale and in the Asgiri korales, and at Katwatta and Hunuketa Ela. The natives are also planting a good deal of it in their gardens, but it is impossible to state the extent. Some planters have been selling plants, and I had a nursery made in my compound of 10,000 plants out of Gansabhawa funds. The cost was recovered by the sale of about 6,040 plants.

A good deal of land is also being opened in tea, old abandoned estates being opened up again. This is chiefly noticeable near Bandarapola, Ratwatta, Hapuwida and Iriyagolla.

Planters are buying up a good deal of chena lands from villagers for tea and cacao, a course which is for their mutual benefit, I think, except where purchases are made of gardens and lands so close to the villages that it practically means that the villagers have hardly any lands left for them to live upon. I cannot think this is good policy. It drives away the villagers, whose labour would be useful. As for the villagers, they become "like Tamils," as a headman once expressed it to me. Their character must be quite changed with change of surroundings. They certainly have steady work and means of livelihood brought to their doors, but, on the other hand, they are at the caprice of a European employer. With all respect to the planters as a body, it must be admitted that they are not all skilled in managing Sinhalese labour. I have known instances of a proprietor ceasing suddenly to employ Sinhalese labour on account of perhaps a theft on the estate, or some other causes of disagreement. What is to become, for instance, of a village of over 300 inhabitants, who have sold all their lands, except their

fields, gardens, and twelve acres of chena, under such circumstances? I am writing of a case which has actually happened, and I think that those particular villagers have no bright prospect before them with a "cor-i" who does not understand the peculiarities of Sinhalese labourers. I do not for a moment maintain that estates are not of assistance to the Sinhalese for I see all round me every day evidence of the great help they are in giving work to men, women and children; but I do maintain that it is for the mutual benefit of both parties that a planter, making an estate out of village lands, should be careful to leave the villagers an ample margin for their village.

The experiment of cultivation in Laggata, for which Government gave a lease of 5,000 acres near Pallegama, made no advance during the year, but at the time of writing nurseries have, I believe, been started and felling contracts given out.

THE PALMYRA PALM.

It is well known to those who are acquainted with Jaffna that the palmyra palm is one of immense utility to the people. In no other part of the island was it so largely grown as in the peninsula of Jaffna some years ago. The palmyra palm and Jaffna are so intimately connected with each other that their identity, so to speak, has become almost proverbial. What the potato is to the Irishman, or the jak is a way to the Sinhalese, that is palmyra to the native Jaffnese. The absence of rivers or streams, the frequent droughts which occur in Jaffna, and the barren nature of the soil in general do not as in the case of other trees, materially affect the growth of the palmyra. It is peculiarly a tropical palm. The poor man in Jaffna depends on its produce all the year round. The trunk or stem is a valuable timber; the leaves are wrought into beautiful baskets and serve as good fodder for the cattle; and the stalks of the leaves are converted into strong and durable ropes and fibre.

Mr. Hansard's mission to inspect and report on the extent of land brought under the cultivation of the palmyra palm and the impetus given to palmyra planting in Hambantota have awakened in us a fresh interest on this subject on which we had intended to say something. The planting of palmyra though more useful to the native inhabitants and one entailing little expense, has yet been allowed to decay. It requires no capital and can be undertaken by one in any circumstances. Several villages are now denuded of the groves of palmyra which once graced them. The trees have been felled and utilised for building purposes, or they are exported to India as timber for sale. No attempt seems to have been made to plant anew those tracts of land from which the trees had been felled, with the palmyra palm. The people unlike olden days, are indifferent about planting waste land with the palmyra palm. This does not augur well for the future of Jaffna with regard to its timber and to some extent, food supply. If the felling of palmyras goes on at the present rate without any attempt at re-planting, it will be an uphill work a few years hence to procure timber for house-building in Jaffna.—Jaffna "Patriot."

DR. MORRIS.

A Grace of the Senate of the University of Dublin has passed conferring the degree of Doctor of Science upon Mr. Daniel Morris, M.A., C.M.G., Assistant-Director of the Royal Gardens at Kew.—*Gardeners' Chronicle*, June 30.

PLANTING COFFEE IN CEYLON.—"R.O." confers an obligation on the press and public by the interesting information (see further on) he communicates respecting the planting up of small clearings and fields in different districts with our old staple and Liberian coffee. We trust the process will go on: in our last Directory up to 31st August 1893, we had in the island—2,438 acres of Liberian coffee and 30,096 of the old Arabian or rather the Abyssinian kind,